Home Course In Poultry Keeping

IV.- The Modern Science of Incubation.

By MILO M. HASTINGS, Formerly Poultryman at Kansas Exper ment Station, Commercial Poultry Ex-pert of the United States Depart-ment of Agriculture, Author of "The Dollar Hen."

[Copyright, 1910, by American Press Asso ciation.] A sub-clubar of the present present and by the Chinese for several thousand years, but has been developed in this country only within the mem-ory of the present generation. Because of the great extent to which incubators have been advertised, the arge circulation of poultry books put out by incubator manufactures and the favorable views of the poultry papers which get their chief support from in-cubator advertisements, the general

cubator advertisements, the general impression is that artificial incubation is a greater improvement over the nat-ural method of hatching than is in reality the case.

Hens or Incubators.

One of the chief claims of the artichick incubation is that by this means chicks can be produced at any season of the year, whereas hens brood only in the spring and summer. This ad-vantage is not great, however, as most inexperienced people believe, for chick-ens hatched in the winter are difficult to rear, and because of the evening up of prices due to cold storage, as referred to in a previous lesson, the use



WELL FORMED 2008 SELECTED POR HATCHING.

of incubators for hatching winter chicks is not particularly profitable. The second important advantage claimed for incubators is that of savclaimed for incubators is that of sav-ing labor, or, in other words, they ea-able one person to batch a much larger number of chicks than would be pos-sible with the use of hens. This claim is worthy of consideration. It is, in fact, the chief reason why incubators have gained their present standing. As to the percentage of hatching and the vitality of the chicks, the aver-age incubator, especially in the hands

age incubator, especially in the hands of the novice, will hardly equal the natural methods. The writer made an extensive study of the results obtained with incubators by Kanaas farmers. The results showed that about as many fearmers. Clied with incubators as an farmers failed with incubators as suc

ceeded with them. The percentage of eggs that hatch either in incubators or with heas is commonly overestimated. The extraordinary hatches at poultry shows are usually arranged by setting two incu-bators and testing out the live eggs just before hatching and putting them in the one machine. A 60 per cent batch of all eggs set for the season is good enough. Many very large and successful poultry farms have lower averages, The advisability of purchase averages. The automation of purchase ing an incubator will depend upon many circumstances. All those who breed Leghorns will require incubators. With the Piymouth Rocks, Wyandottes or Rhode Island Reds I should favor hatching with hens until the poultry work grows to such size that this be-comes impractical.

Eggs For Hatching. There are many superstitious no-tions prevalent regarding the relation of the shape of an egg to its vitality and the sex of the forthcoming chick-en. Such notions have no ground in fact. Eggs having weak shells that might become broken in the next or unusually small eggs should be dis-carded. If there are more eggs avail-ble than we wish for a sitting it will be

them to contine the hen. The hens are the not contain the next in the mass are set in groups, so that these sitting on eggs which are to batch the same time may be given their liberty at once. The attendant $|\Phi_s$ only to re-move the board from the next, lift off

once. The attendant less only to re-more the board from the next. lift off the hens and return in a hour to see that there is a hen on each next. Another scheme for the easy han-dling of atting hens, the plans fe-which have been largely sold, consists in constructing a series of outdoor nests and runways made by setting foot wide boards on edge about one foot apart. The runways are covered with laths or netting except the one in which the next is constructed, this being protected from the weather by another wide board to form a roof. Each ben thus has ber individual next and a runway, in which the hen may exercise and dust bersell to get fil of lice. Old fruit cans are used to pro-vide food and water. vide food and water.

Such an arrangement for sitting hens reduces the work of caring for them to a minimum, and if the nexts are well protected from the weather and the ground where the nests ar located thrown up so that the water will not run in the results are usually better than with hens set indoors. Th nests should be arranged so that hens may be shut on them when the eggs begin to hatch, or the restless hen will frequently leave the nest with the first few chicks and allow the others to die in the shell.

Essentials of a Good Incubator. In the case of artificial incubation we have a number of points to lool

after that do not concern us when hatching hens. The first to be observ-ed is uniform temperature-103 for all eggs in the machine at all times. The second consideration and one that causes much more trouble in practice is to provide just sufficient circulation of air of just sufficient dryness to cause the eggs to lose water by evap-oration at the normal rate; otherwise the body of the chick will contain too much water or not enough and die in the shell or shortly after batching. The novice can do no better, as far as this and other points of incubation are

this and other points of incubation are concerned, than to follow the direc-tions of the maker of his machine. The following discussion of the points of a good incubator are given to help the poultryman in selecting a machine or in deciding whether he is capable of handling the problem of settingh incubation successful rath. artificial incubation successfully rath-

artineial incubation successfully rath-er than for the purpose of teaching hin to run any particular incubator: The case of the incubator should be built double or triple wall to with-stand variation in the outside tempera-ture. The door should fit neatly and should be made of double glass. The lawn both how and chimney should should be made of double glass. The lamp, both bowl and chimney, should be made of heavy metal material and should have a wick sufficiently wide to maintain the temperature of the incubator with a low blaze. The lamp is generally placed at the end of the machine, though there are some good incubators now made with the lamp incubators now made with the lamp placed underneath the machine. The heat is got from the lamp to the eggs by means of a circulation of hot air or a tank of hot water. The hot air ma chines seem to have proved most suc-cessful in practice, and the majority of well known makes are now of that type. It is easier, however, to make a cheap hot water machine that will retain the heat than it is to make a hot air machine. This is because the tank of hot water holds the heat against sudden changes in outside tem-

Against sudden changes in outside tem-perature. Regulators composed of two metals, as aluminium and steel, are best. Wa-fers filled with ether are more seni-tive, but weaker in action. Hard rub-ber bars are frequently used. The in-cubator needs no arrangement for turning ergs as file is not as importurning eggs, as this is not as impor-tant a part of the operation as is fre-quently stated, and the eggs can be rolled around readily with the hand



THE SUNDAY SCHOOL.

Lesson VII.-Second Quarter, For May 15, 1910.

THE INTERNATIONAL SERIES.

Text of the Lesson, Matt. xli, 22-32, 38-42-Memory Verse, 41-Golden Text, Matt. xil, 30-Commentary Prepared by Rev. D. M. Stearns.

We have today the option of the regular lesson or a special lesson on the Holy Spirit, but as the lesson for the day gives opportunity for a study of the Holy Spirit we will continue regularly. First we see Him healing a demon possessed man who was both blind and dumb, and the man both spake and saw. The people were amazed and said, "Is not this the son of David?" perhaps recalling the words of isa. xxxx, 5, 6, "Then the eyes of the billed shall be opened and the ears of the deaf shall be unstop-ped; then shall the iame man leap as an hart and the tongue of the dumb an mart and the longue of the dumo sing." Recently we saw Him heat a demon possessed dumb man (ix, 32, 33), but in this case the afflicted man was blind as well as dumb. But noth-ing is too hard for the Lord. Can we imagine a kingdom without sickness the section of the section of the sections of the section of the s

The blind Pharisees madly accuse Him of casting out demons by the power of the devil himself, as if Satan would cast out Satan and work against himself. How foolishly the devil does cause people to talk! They talk much more foolishly today when they say and teach that there is no devil at all and no hell. It would seem from verse 27 that unbellevers were permitted by their ruler to do some wonderful things, even as the magi-cians of Egypt counterfeited the mir-acies of Mones up to a certain point. We know from II Thess, ii, 9; Rev xili, 11-15, that at the end of this age the devil will specially deceive many by his miracles and signs and lying wonders. Our Lord Jesus said that if it were possible they would deceive wonders. Our Lord Jesus said that if it were possible they would deceive the very elect (Matt. xxiv, 24), so we must not be deceived by the wonders wrought by the adversary in the name of spiritualism, Christian Science and other faise teaching of our times. These things will continue and in crease until the devil, the strong man crease until the devil, the strong man of verse 29, shall have been bound and shut up in the bottomiess pit for 1,000 years (Rev. xx, 1-3). The truth of God, just as it stands in His word, is the only power that will set us frage from all delusions (John vill, 32, 38). We are either with Christ or against Him, either taught by the spirit of God or the devil (verses 28, 30). If nearly resident the Hole Solid and listen

people resist the Holy Spirit and listen to the teaching of demons it is, as Jesus said, impossible to escape the damnation of heil (Matt. xxiii, 33). As I understand it the unpardonable sin of verses 31, 32, and I John v. 16, is the persistent turning from the Holy Spirit to the devil and attributing to the latter the works of the Spirit. Let the latter the works of the Spirit. Let it comfort and encourage any who fear they have committed the unpar-domable sin to remember that the very fact that they have a fear of such guilt is evidence that the Holy Spirit has not left them, and, however far they may have wandered, if they will only turn to the Lord the word stands. "Him that cometh unto me 1 will in nowise cast out" (John vi, 37). That words are an evidence of the

nowise cast out" (John YI, 37). That words are an evidence of the condition of the heart (verse 34) should make us covet to have the word of God dweiling in us richly in order that our words may savor of Christ. It would be well to be like Elikin in Job xxxii, 18-20, and that would be the case if our experience was that of Job xxiii, 12: Jer. xy, 16. If we kept verse 36 of our lesson in mind it would make us more carfeul in view would make us more careful in view

would make us more careful in view of Rom, xiv, 10, 12. In verse 38 see these blind and fool-ish Pharisees asking for a sign after He had already wrought in their pres-ence all the signs which the prophets had and would be done by the Mes-siah. No wonder that He called them an evil and adultorous (ido) worship-lag, world conformed) generation (verse 30), a generation of vipers (verse 34; axiii, 33), of their father the devil (John vill, 44), for He knew them well and knew what was in them. See in verses 40, 41, His indorsement (John vill, 44), for He knew them well and knew what was in them. See in verses 40, 41, His indorsement of the story of Jonah and the great and no doubt He looked onward to the time when israel, cast up on their shores by the nations, would become truly penitent at His appearance in good. See in verse 42 His indorse ment of the story of the queen of Shaba and the wisdom of Solomon or Shaba and the wisdom of Solomon an doublement of Iss. Is he to us a greater than Jonah or Solomon or Moses or Aaron? Do we say, with stress than Jonah or Solomon or Moses or Aaron? Do we say, with stress than Jonah or Solomon or Moses or Aaron? Do we say, with stress than Jonah or Solomon or Moses or Aaron? Do we say, with stress than Jonah or Solomon or Moses or Aaron? Do we say, with stress than Jonah or Solomon or Moses or Aaron? Do we say, with stress than Jonah or Solomon or Moses or Aaron? Do we say, with stress than Jonah or Solomon or Moses or Aaron? Do we say, with stress who profees to be His friands believed are no friends of His, but rather belong to the company repre-sented by the Pharissees of His day. Keing rejected by the nation, whose views 14), He is led, by a visit from His other and His brethren, to de-iare, "Whoseover shall do the will more is my brothers and states and others" (were 50). Compare Luke uill 21

THE MAIDEN FAIR.

Without Her Curlicues May be as Ugly

And here is a maiden oh, more than fair. Who has robbed her mattress of all its hair and fashioned mattress of all its hair and fashioned it up into curlicues, and rats, and and switches and puff's to use as sorted styles on her billowy crown. She puts it up and she takes it down on the burean and stand and chair, till it swings and dangles from every where; with pins and glue she sticks and stuffs her own hair with ring-lets, and frills, and puffs, that wave on her forehead and, cover her neck and piles in bales on her quarterdeck. She has braided switches, and rolls, and frills, and pins and ribbon and old goosequills that she smooths

old goosequills that she smooths and sticks and stuffs and stabs and dangles and does into dingledabs. Then she stuff's it high with old bed Then she stuff's it high with old bed springs and pillows a id bath towels and other things and sinks in her chair with a gladsome sigh, with a pile of coiffure two feet high and yards across and fathoms deep and falls exhausted and fast asleep.

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Bombay News.

ent to Denton recently.

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FIGURES IN THUSLY.

What a Chicken Will Weigh When It Is Cleaned.

In Exchange.

"It hes been demonstrated that chicken cf live weight, four and one-quarter pounds, will, with head re-moved, bled and picked, weigh three and seven-eighths pounds; feet off, three pounds and three quarter; dressed, three pounds; boiled, one pound and eleven cunces; bones, skin and surplus fat removed, seven-eighths of a pound. The chicken, therefore, at 15 cents a pound, cost, 63 3.4 cents; and for this sum you have seven eighths of a pound of edidle portion. In other words, your belied chicken costs 72 cents a pound." "It has been demonstrated that

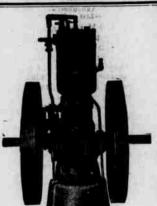
Why Not Commencement Again

Why Not Commencement Again The regular annual commence-ment of Why Not Academy and Business Institute will be held on Thuraday, May 26th. The fol-lowing are the officers: for the day, marshals, J. A. Russell, Chief; C. O. McNeill H. L. Garner, W. B. Maness. For night, marshals, H. H. Lowdermilk, Chief; F. J. Cox, J. W. Beane, J. C. Auman. The address will be delivered by Rev. John M. Gibbs, of Hope Mills, N. C. There will be three gold medals

There will be three gold medals given for recitations and declama-

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Southern Ruralist Company ATLANTA, GA.

Bembay News. Mr. James Kesras of this plac', and Miss Hatie z sid, of Handy, were mar i d May 1 :. Mr. E. H. Wooley, of this 1 ice, made a basiness trip to 1 ray April 30. Miss amie Morris visited her gr. nd. par.nts, Mr. and Mrs. Nelso. Morris, a few days age. Mrs. T. H. Russell and grandson, Jess., via ted Mrs. Russell's shughter, Mrs. Cors Kinney, of Silver Hill, recoulty. Rev. C. A. Woot preached au excellent sermon at Oak Grove May let. Mrs. N. F. Kearne and Miss Beulah Ingram went to Denton recently.

attend commencement at Denton the 19th of May and are looking forward to a nice

Will Promote Beauty.

unt, Mrs. Luther. Ever bod 7 around h re are expecting to

better to select the fresher eggs than to be overparticular about shape and appearance. The eggs for hatching should be stored in a cool, dry location and shifted or rolled about occasion

ally. Ecgs exposed to freesing tempers Pogs exposed to freesing tempers Eccs exposed to freezing tempera-ture if not actually frozen may still rotain their vitality, but it is generally considered best to keep them at a tem-perature between 40 and 70 degrees. If kept too warm eggs dry out repid-ly and will not hold their vitality. A good rule is not to set eggs over two weeks old. The idea that jarring, as by thunder, will injure the hatching of eggs is without foundation; like-wise the advice to lat eggs rest after shipping has been proved to be groundhipping has been proved to be ground-

Accommodations For Sitting Hens. The convenience of the arrangement for sitting bens has a great deal to do with the success of the hatching. By il means I should advise that a place e provided for the sitting hens away non the general pointry house. This may be in a separate room or building, there there of house are used for the sate and feed, water and dust wai-re provided in the room. The next into a based in the top, not on the based a based is this bounds around

END OF THE HATCH.

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